

CLAIMS

1. A cell activator comprising a cyclic polylactic acid obtained by raising a temperature of an L-lactic acid solution while jetting inert gas directly thereinto for dehydration and polymerization.
2. A manufacturing method of a cell activator comprising:
 - a step of introducing into a vessel a L-lactic acid solution, in which a catalyst does not exist,
 - a step of obtaining a cyclic polylactic acid by raising a temperature of the L-lactic acid solution step-wisely up to a temperature exceeding the boiling point of L-lactic acids while jetting inert gas directly into the said L-lactic acid solution for dehydration and polymerization, and
 - a step of removing the yielded cyclic polylactic acid from the vessel.
3. The manufacturing method of a cell activator according to Claim 2, characterized by stirring the L-lactic acid solution by the jetting of the inert gas directly into the L-lactic acid solution.
4. The manufacturing method of a cell activator according to Claim 2 or 3, characterized by step-wisely vacuuming when the temperature is raised step-wisely to the temperature exceeding the boiling point of the L-lactic acid for dehydration and polymerization.
5. An apparatus for manufacturing a cell activator comprising:
 - a main body of a vessel having an inlet for an L-lactic acid, an inert gas jetting tube connection part, and a cyclic polylactic acid extract window,
 - an inert gas jetting tube, which jets inert gas directly into the L-lactic acid inside the main body of the vessel, and
 - a heater to heat L-lactic acid in the main body of the vessel.
6. The apparatus for manufacturing a cell activator according to Claim 5, characterized by comprising:
 - a cooler provided inside, and
 - a heat exchanger, one end of which is connected to the main body of the vessel and the other end of which to a vacuum pump, said heat exchanger possessing a water vapor tank having an extract window for water vapor provided at a lower part.